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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,573	01/28/2005	Shigeo Yamaguchi	040894-7171	8882

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MORGAN LEWIS & BOCKIUS LLP
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WASHINGTON, DC 20004

EXAMINER

FICK, ANTHONY D

ART UNIT

PAPER NUMBER

1753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/522,573	Applicant(s) YAMAGUCHI ET AL.	
	Examiner Anthony Fick	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. Applicant's amendments to the specification and claims have overcome the previous objections and rejections under 35 U.S.C. 112 second paragraph. The rejections have been accordingly withdrawn.

Claim Rejections - 35 USC § 102/103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over O'Leary et al, "Electron transport in wurtzite indium nitride," J. Appl. Phys., 83(2), pages 826-829, January 15, 1998.

O'Leary et al teaches wurtzite indium nitride (see the entire document), which, it is the Examiner's position, has the claimed Seebeck coefficient and electrical resistivity, particularly in view of the fact that wurtzite indium nitride is within the scope of formula (B) in instant claim 6. Since O'Leary et al teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

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In addition, the instant Seebeck coefficient and electrical resistivity would obviously have been present once O'Leary et al's wurtzite indium nitride has been provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

5. Claims 6-9 and 11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamauchi (U.S. Patent 4,365,107).

Yamauchi teaches amorphous indium nitride (see the Table at cols. 3-4), which, it is the Examiner's position, has the claimed Seebeck coefficient and electrical resistivity, particularly in view of the fact that amorphous indium nitride is within the scope of formula (B) in instant claim 6. Since Yamauchi teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

In addition, the instant Seebeck coefficient and electrical resistivity would obviously have been present once Yamauchi's amorphous indium nitride has been provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

6. Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Steffes et al, "New $\text{In}_x\text{O}_y\text{N}_z$ films for the application of NO_2 sensors," Sensors and Actuators B, Vol. 77, (2001), pages 352-358.

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Steffes et al prepares indium oxynitride (see the entire document), which, it is the Examiner's position, has the claimed Seebeck coefficient and electrical resistivity, particularly in view of the fact the indium oxynitride is within the scope of formula (A) in instant claim 1. The indium oxynitride has very small grains of 10 to 30 nm (see abstract) and thus, it is the Examiner's position that Steffes et al's indium oxynitride can be considered to be amorphous. Since Steffes et al teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

In addition, the instant Seebeck coefficient and electrical resistivity would obviously have been present once Steffes et al indium oxynitride has been provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

Response to Arguments

7. Applicant's arguments filed September 13, 2006 have been fully considered but they are not persuasive. Applicant argues the references to O'Leary, Yamauchi and Steffes do not disclose every element of the claims because these references do not disclose Seebeck coefficients. The examiner respectfully disagrees. The applicant's present claims are to materials having a certain property. With respect to the references to O'Leary and Yamauchi, the references teach the existence of wurtzite and amorphous indium nitride. The formula required in claims 6 through 11 allows z, y, u, v and w to all be equal to zero with x and m equal to 1. Indium nitride meets that requirement. It is the position of the examiner that the Seebeck coefficient is a physical property of a material and barring any contrary showing, compositions that meet

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applicant's formula will inherently have the value of the Seebeck coefficient as claimed by applicant (see MPEP 2112.01). While the references do not disclose Seebeck coefficients for the material, the references do disclose the material and the discovery of a new property of a known material is not novel (see MPEP 2112). Therefore as the references do disclose compositions that meet the formulaic requirement of the claims, the references are deemed to disclose the claimed material with inherently the same properties and thus the rejections are maintained. The same reasoning is also true for the reference to Steffes and claims 1 through 5.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Fick whose telephone number is (571) 272-6393. The examiner can normally be reached on Monday thru Friday 7 AM to 4 PM.

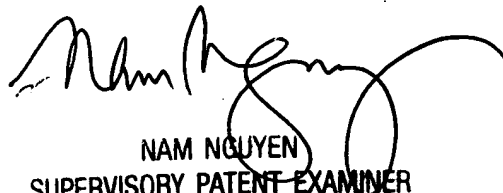
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Fick
AU 1753
January 5, 2007

ADF


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